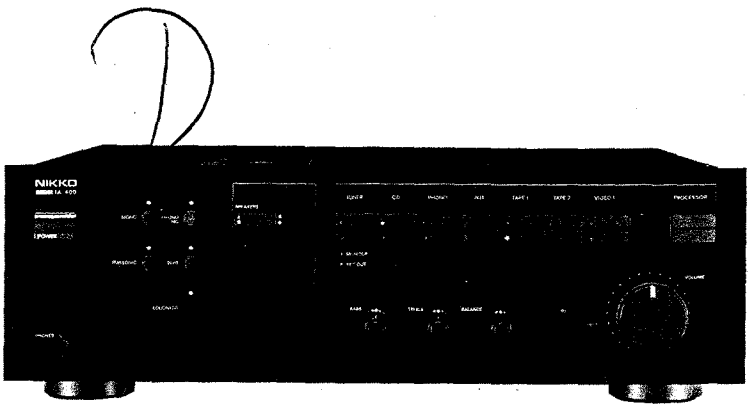
INTEGRATED AMPLIFIER

IA400



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FOR CUSTOMERS IMPORTANT FOR YOUR SAFETY
(APPARATUS THAT EMPLOYS A SUPPLY CORD TERMINATED WITH A POLARIZED TWO-PRONG ATTACHMENT PLUG)

"CAUTION: TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

"ATTENTION: POUR PRÉVENIR LES CHOCS ÉLECTRIQUES, NE PAS UTILISER CETTE FICHE POLARISÉE AVEC UN PROLONGATEUR, UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ÊTRE INSÉRÉES À FOND SANS EN LAISSER AUCUNE PARTIE À DÉCOUVERT.

The space below is provided to record the Serial Number of this unit.
The Serial Number can be found on the back of the product.

Serial No.:_____

Retain this information for future reference.

NIKKO

CAUTION!
RISK OF ELECTRIC SHOCK. DO NOT OPEN!

CAUTION: TO PREVENT ELECTRIC SHOCK DO NOT REMOVE ANY COVERS. NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shocks to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

SAFETY INSTRUCTIONS

1. Read Instructions - All the safety and operating instructions should be read before the appliance is operated.
2. Retain Instructions - The safety and operating instructions should be retained for future reference.
3. Heed Warnings - All warnings on the appliance and in the operating instructions should be adhered to.
4. Follow Instructions - All operating and use instructions should be followed.
5. Water and Moisture - The appliance should not be used near water - for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, near a swimming pool, and the like.
6. Carts and Stands - The appliance should be used only with a cart or stand that is recommended by the manufacturer. An appliance and cart combinations should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

7. Wall or Ceiling Mounting - The appliance should be mounted to a wall or ceiling only as recommended by the manufacturer.
8. Ventilation - The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation opening; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
9. Heat - The appliance should be situated away from heat sources such as radiators, head registers, stoves, or other appliance that produce heat.
10. Cleaning - The appliance should be cleaned only as recommended by the manufacturer.
11. Object and Liquid Entry - Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
12. Power Lines - An outdoor antenna should be located away from power lines.
13. Outdoor Antenna Grounding - If an outside antenna is connected to the receiver, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up of static charges. Section 810 of the National Electrical Code, ANSI/NFPA No. 70-1984, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Figure.

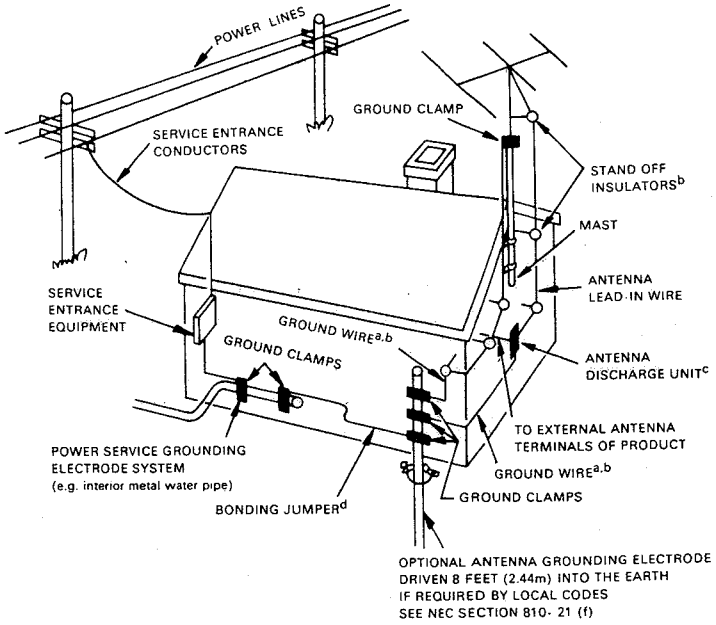
a. Use No. 10 AWG copper, No. 8 AWG aluminum, No. 17 AWG copper-clad steel, bronze wire, or larger as a ground wire.
b. Secure antenna lead-in and ground wires to house with stand-off insulators spaced 4-6 feet (1.22-1.83 m) apart.
c. Mount antenna discharge unit as close as possible to where lead-in enters house.
d. Use jumper wire not smaller than N0. 6 AWG copper, or the equivalent , when a separate antenna-grounding electrode is used. See NEC Section 810-21(j).

14. Power Sources - The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.
15. Power-Cord Protection - Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.
16. Nonuse Periods - The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.
17. Grounding or Polarization - The precautions should be taken so that the grounding or polarization means of an appliance is not defeated.
18. Damage Requiring Service - The appliance should be serviced by qualified service personnel when:

A. The power-supply cord or the plug has been damaged; or
B. Objects have fallen, or liquid has been spilled into the appliance; or
C. The appliance has been exposed to rain, or
D. The appliance does not appear to operate normally or exhibits a marked change in performance; or
E. The appliance has been dropped, or the enclosure damaged.

19. Servicing - The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnal.

EXAMPLE OF ANTENNA GROUNDING ACCORDING TO NATIONAL ELECTRICAL CODE INSTRUCTIONS CONTAINED IN ARTICLE 810- "RADIO AND TELEVISION EQUIPMENT"



ENGLISH

INTRODUCTION

Thank you for selecting the NIKKO IA400 Integrated Amplifier. Please read and observe the instructions below in order to protect your amplifier from damage. Should you have any doubts or questions after reading this instruction manual carefully, please contact your nearest NIKKO dealer.

- Do not place the unit in a location exposed to direct sunlight and keep away from heat (stoves, etc.).
- Make sure the unit is well ventilated and is not exposed to moisture or dampness.
- Do not place the unit in a location with excessive dust.
- Make sure the unit is placed on a flat, stable surface, free from vibrations.
- Be sure not to block the ventilation holes of the cover with a piece of cloth or similar object.
- Do not use alcohol, thinner, benzine, aerosol products, or other chemicals for cleaning the cabinet.

* Should your unit require service or maintenance, contact your nearest authorized NIKKO Service Center or your dealer.

Warning: To prevent fire or shock hazard, do not expose this appliance to rain or moisture.

SPECIFICATIONS

- **Amplifier Section**

Rated Power Output ..... 80 W + 80 W

Min. RMS power per channel into 8 ohms from 20 Hz to 20 kHz at 0,009% T.H.D., both channels driven.

Both Channels Driven
at 4 ohms, 1 kHz, (DIN) ..... 130 W + 130 W

Dynamic Power Output
8 ohms ..... 120 W
6 ohms ..... 150 W
4 ohms ..... 180 W

Dynamic Headroom ..... 1.76 dB
Power Bandwidth (T.H.D. 0.03 %) ..... 10 Hz to 60 kHz
Damping Factor (8 ohms) 120
Total Harmonic Distortion
PHONO to REC OUT 1kHz
MM 0.003%
MC 0.003%
CD (1kHz at 80W) 0.003%

Input Sensitivity/Impedance
PHONO MM ..... 2.5 mV/47 kohms
MC ..... 0.25 mV/100 ohms
CD 140 mV/47kohms
TUNER 140 mV/47kohms
VIDEO 140 mV/47kohms
TAPE 140 mV/47kohms

Signal-to-Noise Ratio (IHF-A network)
PHONO MM (INPUT 5mV) 94dB
MC (INPUT 0.5mV) 80dB
CD, TUNER, TAPE 105dB
MAIN IN 120dB

PHONO Overload level at 1kHz (0.1% T.H.D)
MM 150mV
MC 15mV

Frequency Response
PHONO (RIAA, REC OUT 150mV)
MM ..... 20 Hz to 20kHz +0dB, −1.5dB
MC ..... 20 Hz to 20kHz +0dB, −1.5dB
CD (at 1W) ..... 5 Hz to 100 kHz +0dB, −1.5dB

Tone Controls
BASS ..... ±10dB (100 Hz)
TREBLE ..... ±10dB (10kHz)

SUBSONIC FILTER ..... 15 Hz, −12dB/oct.

- **General**

Power Requirement
U.S.A & Canada ..... AC 120V, 60Hz
Europe ..... AC 220V, 50 Hz

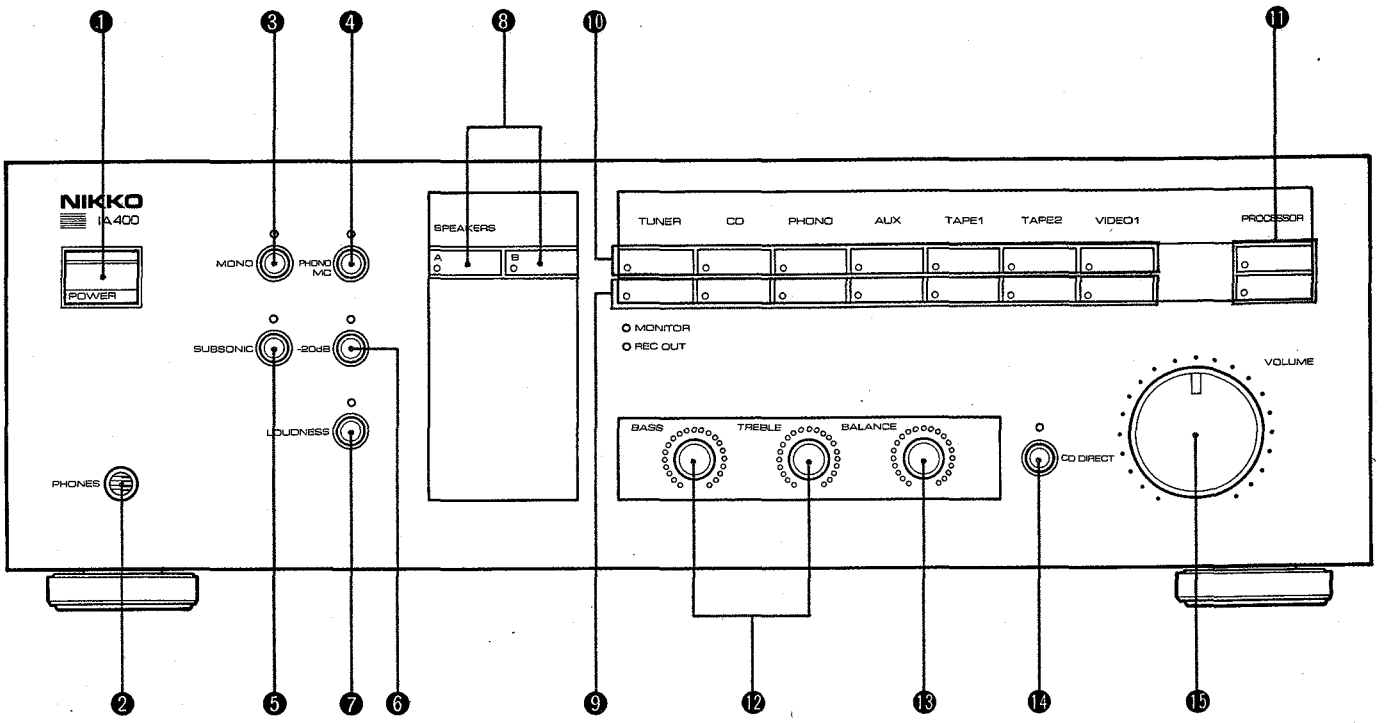
Power Consumption
U.S.A & Canada 300W, 400VA

Dimensions ..... 442(W)x146(H)x413(D)mm
(17-2/5"x5-3/4"x16-1/4")

Weight ..... 14.5 kg (32 lbs)

* Specifications are subject to change without notice.

CONTROLS



❶ POWER Button
This button turns the power on and off. The indicator above the button lights up upon power on.

❷ PHONES Jack
For connection of stereo headphones.

❸ MONO Button
Use this button to select between stereo and mono.

❹ PHONO MC Button
This button is used to select the type of phono cartridge to be used. When this button is pressed to the MC position, the built-in head amplifier circuit is activated, then an MC phono cartridge of low output voltage can be used. (Some MC phono cartridges, however, have a higher output voltage and high impedance. Please examine the specifications of the cartridge before using it.)

❺ SUBSONIC Button
Press this button to eliminate low frequency noise such as the rumble caused by the turntable's motor or warped records.

❻ −20dB Button
Press this button to cut the volume by 20dB (to 1/10th its previous level). Use this button for temporary reduction of the volume. In addition, the −20dB button is convenient when you want to listen at very low volume.

❼ LOUDNESS Button
When you listen at a very low level, use this button to restore the natural tonal balance.

❽ SPEAKERS Selector Buttons
These buttons are used to select operation of two sets of speakers. That is, speaker set A, B, or A + B may be operated, or all speakers may be disabled when headphones are used.

❾ REC OUT Selector
The signal selected with this button is output through the REC OUT JACKS on the BACK PLATE.

❿ MONITOR Selector
PHONO: To listen to the signal from the connected turntable.
TUNER: To listen to the signal from the connected tuner.
CD: To listen to the signal from the connected CD player.
VIDEO: To listen to the signal from the connected VIDEO component.
TAPE: To listen to the signal from the connected tape deck.
AUX: To listen to the signal from another connected unit.

⓫ PROCESSOR Button
On the rear panel of the integrated amplifier are located input/output terminals for sound processors. This button permits effects of the sound processors connected to the amplifier to be turned ON and OFF.

Note: The PROCESSOR can be inserted into either the MONITOR or REC OUT, but not into both of them at the same time.

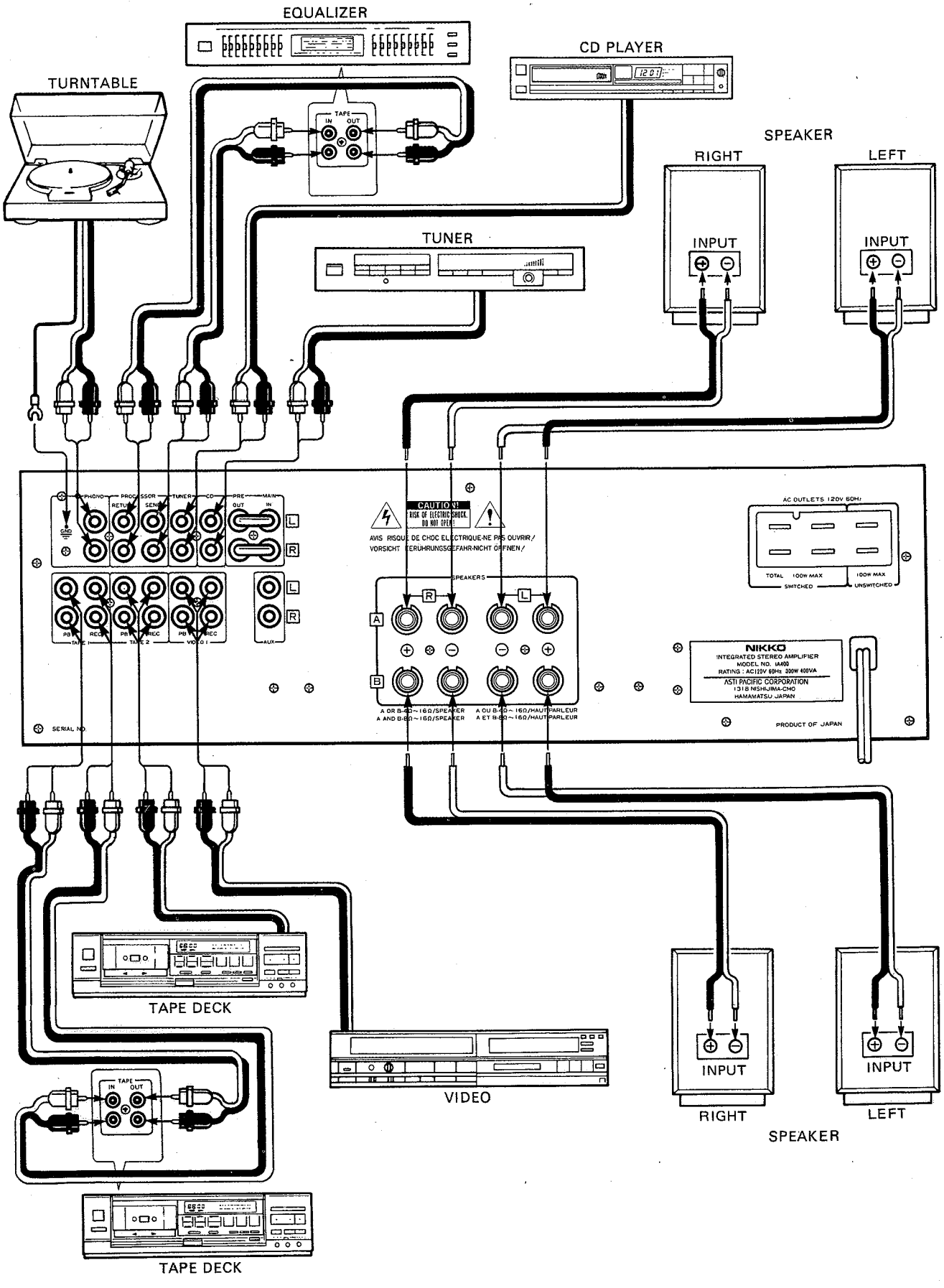
⓬ Tone Controls
BASS: Controls the level of the low frequencies.
TREBLE: Controls the level of the high frequencies.

⓭ BALANCE Control
The balance between left and right channel volume levels can be adjusted using this control.

⓮ CD DIRECT Button
Press this button, and you can listen to the sound from the CD, regardless of the MONITOR Selector. In this case, the functions of all the buttons except for the VOLUME knob and the −20dB button are ineffective.

⓯ VOLUME Knob
Use this knob to adjust the volume level. Turn it to the right to increase volume and to the left to decrease it. Be sure to turn it all the way to the left before switching on the power. Then raise the volume gradually to the desired level.

CONNECTION DIAGRAM



CONNECTIONS AND OPERATION

Do not plug the power cord into an AC outlet until all connections are completed. Be sure to keep POWER turned OFF.

Speaker Connection and Use

• Connection

Strip off approx. 7mm of the insulation at the end of the speaker cable, insert it into the hole below (above) the red (black) knob while pushing on the corresponding knob and, when the cable's end is fully inserted, release the knob. Two speaker systems (A and B) may be connected to this unit. Speaker system selection is done using the SPEAKERS A and B selector buttons on the front panel.

• Precautions

(1) Be sure you do not short circuit the (+) and (−) terminals of the speakers.
(2) Connect each speaker making sure the polarity (+ and −) is correct.
(3) Do not connect more than one speaker to one terminal.

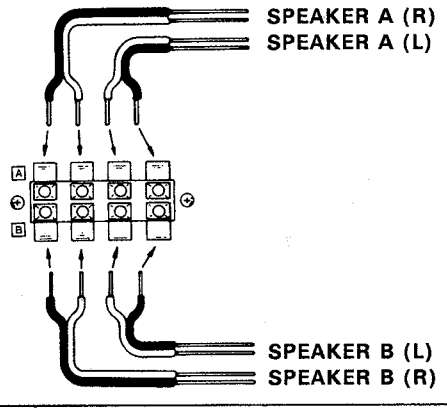


Fig. 2

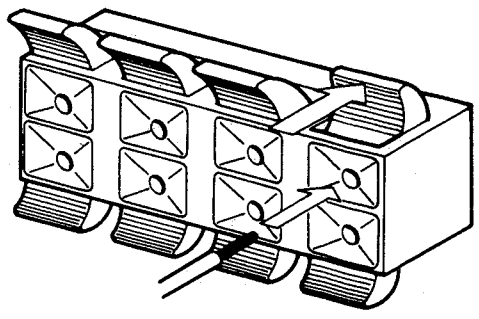


Fig. 3

• Speaker Cables

To maintain proper damping factor, use the thickest speaker cable available (AC power cord - 19AWG preferable).

• Speaker Impedance

Only connect speakers with an impedance of 6 to 16 ohms. However, when connecting two speaker systems and both systems, A and B, are used simultaneously, the impedance should be from 12 to 16 ohms.

• Speaker Placement

Normally speakers are placed with their backs against a hard wall, as such walls reflect low frequencies, thus providing more bass. If the speakers are facing a hard surface (e.g. a glass surface, a concrete wall, etc.) these same frequencies will be reflected rather than absorbed, resulting in deteriorated sound reproduction. Thus, it is recommended to arrange a thick curtain, or any other sound absorbing material, to absorb these frequencies and improve the acoustics in the listening room.

Turntable Connection and Record Playback

• Connection

Connect the turntable to the PHONO jacks on the back panel using pin-plug cords. If your turntable is equipped with a ground lead, connect this to the GND terminal of the unit.

• Record Playback

(1) Press the PHONO button.
(2) Operate the turntable, and turn up the VOLUME control to the desired level.

• Cartridge

Turntables with magnetic cartridges should be connected to the PHONO jacks on the back of the unit. If your turntable unit features a ceramic cartridge, it should be connected to the CD jacks. The PHONO input sensitivity is 2.5 mV with an allowable maximum input voltage of 150 mV.

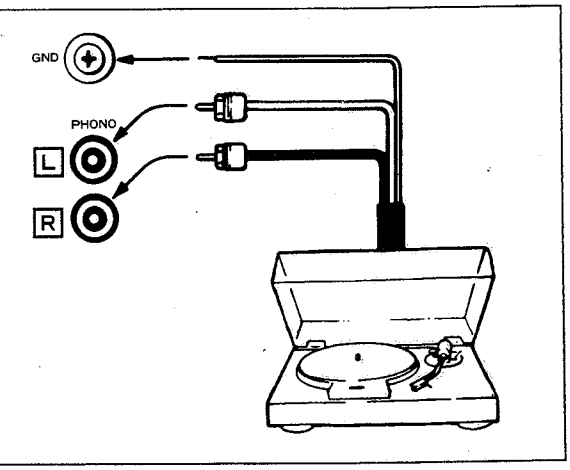


Fig. 4

CONNECTIONS AND OPERATION

Connection to the Input Jacks and Operation

• **For playback only**
Connect the outputs of your CD player, tuner and video component to these jacks. These jacks have an input sensitivity of 150 mV and an input impedance of 30 kohms, equal to the TAPE jacks.
Press the MONITOR selector buttons, then adjust the volume.

Tape Deck Connection — Playback and Recording

• **Connections**
Connect the LINE OUT (OUTPUT) jacks of the tape deck to the TAPE PB jacks of the unit and LINE IN (INPUT) jacks of the tape deck to the TAPE REC jacks of the unit, making sure the left (L) and right (R) channels are correctly connected.

• **Tape Playback**
(1) Press the TAPE1, TAPE2, or VIDEO1 button on the front panel to the ON position depending on which deck you want to listen to. (The indicator lamp lights up.)
(2) Start playback on the desired tape deck.
(3) Turn the VOLUME control up to the desired level.

• **Tape Recording**
The signal selected through the REC OUT selector is issued at a constant level, as a recording signal, from the REC jacks.
In this case, recording is not affected, even if the VOLUME, BALANCE, BASS and TREBLE controls are operated. Select the program to be recorded with the REC OUT selector, operate the source and set the tape deck in recording mode. The program can then be recorded on the tape.

Note: Two or three tape decks can be connected to this unit using the TAPE1, TAPE2, and VIDEO1 jacks.

Processor

• **Connection**
A sound processor (equalizer, etc.) can be connected to this unit using the PROCESSOR jacks on the back panel.
Connect the INPUT jacks of the sound procesesor to the PROCESSOR SEND jacks of the unit and the OUTPUT jacks of the sound processor to the PROCESSOR RETURN jacks of the unit, making sure the left (L) and right (R) channels are correctly connected.

• **Use**
Press the buttons on the right side of the MONIOTR Selector and the REC OUT Selector, and the sound processor can be applied to MONITOR and REC OUT. This function does not operate when the CD DIRECT button is on.

Note: When either the MONITOR Selector or the REC OUT Selector is on, other buttons will not be turned on even if pressed. Make sure that both of them are turned off, before any of the other buttons is turned on.
The LED of the MONITOR does not light when the CD DIRECT button is on. However, if the MONITOR is already on when the CD DIRECT button is turned on, the REC OUT will not be turned on even if the LED is not lit.

Headphones Connection and Use

• **Connection**
Plug in the headphones plug into the PHONES jack on the front panel.

• **Use**
The signal is always sent to the PHONES jack regardless of whether the SPEAKERS A and B selector buttons are in the ON or OFF position. For private listening through headphones, release (OFF) the SPEAKERS A and B selector buttons, and adjust the signal level with the VOLUME control.

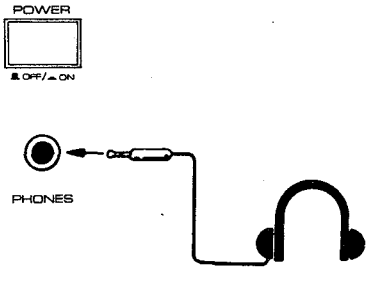


Fig. 5